

09/012,679

(FILE 'HOME' ENTERED AT 11:29:02 ON 15 APR 1999)

FILE 'REGISTRY' ENTERED AT 11:29:11 ON 15 APR 1999

L1 STRUCTURE UPLOADED
L2 QUE L1
L3 0 S L2
L4 3 S L2 FULL

FILE 'CA' ENTERED AT 11:29:59 ON 15 APR 1999

L5 2 S L4

FILE 'REGISTRY' ENTERED AT 11:41:12 ON 15 APR 1999

L6 STRUCTURE UPLOADED
L7 QUE L6
L8 0 S L7
L9 0 S L7 FULL
E "BIS(CYCLOPENTADIENYL)TANTALUM TRIHYDRATE"/CN
L10 1 S E2
L11 STR 53522-50-2
L12 0 S L11
L13 25 S L11 FULL

FILE 'CA' ENTERED AT 11:53:29 ON 15 APR 1999

L14 0 S L12
L15 78 S L13
L16 0 S L15 AND CVD
L17 74 S L15 AND PY<=1997
L18 0 S L17 AND TANTALUM NITRIDE
L19 0 S L17 AND TAN
L20 0 S L17 AND TANTALUM AMIDE
L21 0 S L17 AND TA FILM
L22 0 S L17 AND TANTALUM FILM
L23 1 S L17 AND CHEMICAL VAPOR DEPOSITION

=> s l13/p

L24 26 L13/P

=> d 1-26 bib abs

L24 ANSWER 1 OF 26 CA COPYRIGHT 1999 ACS

AN 129:16200 CA

TI On the Mechanism of Dihydrogen Addition to Tantalocene Complexes
AU Millar, Susan P.; Zubris, Deanna L.; Bercaw, John E.; Eisenberg, Richard
CS Department of Chemistry, University of Rochester, Rochester, NY, 14627,
USA

SO J. Am. Chem. Soc. (1998), 120(21), 5329-5330

CODEN: JACSAT; ISSN: 0002-7863

PB American Chemical Society

DT Journal

LA English

AB The mechanism of addn. reaction of hydrogen to benzyne hydride
tantalocene
complex to give trihydride complex, Cp*TaH3 via intermediate dihydride
complex, Cp*TaH2, is described.

L24 ANSWER 2 OF 26 CA COPYRIGHT 1999 ACS

AN 127:135885 CA

TI Coordination behavior of LiBEt4 towards (.eta.5-C5H5)2ReH,
.eta.5-C5H5)2WH2 and (.eta.5-C5H5)2TaH3. Solid state structure of

AU [(.eta.5-C5H5)2TaH.cndot.AlH2(OCH2CH2CH2CH3)]2
Fryzuk, Michael D.; Clentsmith, Guy K. B.; Rettig, Steven J.
CS Department of Chemistry, University of British Columbia, 2036 Main Mall,
Vancouver, BC, V6T 1Z1, Can.
SO Inorg. Chim. Acta (1997), 259(1-2), 51-59
CODEN: ICHAA3; ISSN: 0020-1693
PB Elsevier
DT Journal
LA English
AB The interactions of LiBEt₄ with the early metal metallocene hydrides (.eta.5-C5H5)₂MH_n (M = Ta, n = 3; M = W, n = 2; M = Re, n = 1) were studied. The 1:1 adduct formation between the Li cation of the sol. salt and the hydride ligands of the neutral hydride complexes is quite stable in soln.; competition expts. show that the strength of this interaction increases as the no. of hydride ligands increases. The x-ray crystal structure of [(.eta.5-C5H5)2TaH.cndot.AlH2(OBu)]2 is described; this is the intermediate that forms when (.eta.5-C5H5)2TaCl₂ and LiAlH₄ interact in THF. The tetranuclear structure results from the bridging butoxy groups which in turn arise from ring-opening of THF. Crystal data: [(.eta.5-C5H5)2TaH.cndot.AlH2(OCH2CH2CH2CH3)]2 (C₂₈H₄₄Al₂O₂Ta₂), monoclinic, a 7.534(2), b 11.433(1), c 17.733(2) .ANG., .beta. 100.15(1).degree., Z = 2, space group P21/c. The structure was solved by Patterson methods and was refined by full-matrix least-squares procedures to R = 0.036 (Rw = 0.032) for 1500 reflections with I .gtoreq. 3.sigmas. (I).

L24 ANSWER 3 OF 26 CA COPYRIGHT 1999 ACS
AN 127:109023 CA
TI Synthesis of and NMR T1 Relaxation in the Bimetallic Trihydride Complexes Cp₂TaH₂(.mu.-H)M(CO)₅ (M = Cr, Mo, W)
AU Bakhtutov, Vladimir I.; Vorontsov, Evgenii V.; Boni, Gilles; Moise, Claude
CS Institute of Organo-Element Compounds, Russian Academy of Sciences, Moscow, 117813, Russia
SO Inorg. Chem. (1997), 36(18), 4055-4059
CODEN: INOCAJ; ISSN: 0020-1669
PB American Chemical Society
DT Journal
LA English
AB New bimetallic trihydrides Cp₂TaH₂(.mu.-H)M(CO)₅ [M = Cr (2), Mo (3), W (4)] were prep'd. by the room-temp. high-yield reaction between Cp₂TaH₃ (1) and M(CO)₅. The complexes were characterized by elemental analyses and variable-temp. ¹H NMR and IR spectra. The structures and arrangements of the hydride ligands in complexes 2-4, where the central hydride ligand is bound to M, were detd. from ¹H NMR and ¹H T1 relaxation time data. Structural interpretations of ¹H T1 measurements, carried out for 1 and bimetallic systems <295 K, can be made from the isotropic motion approach and of a model of uncoupled nuclei. The high-temp. satn. transfer expts. in the ¹H NMR spectra showed complexes 2-4 to be stereochem. nonrigid demonstrating an HX/HA exchange on the T1 NMR time scale. The energy barrier of the hydride/hydride exchange is decreased in going from complex 1 to bimetallic systems 2-4.

L24 ANSWER 4 OF 26 CA COPYRIGHT 1999 ACS
AN 126:47310 CA
TI Exchange Coupling in Niobocene Trihydrides, Nb(C₅H₃RR')₂H₃, and Their Adducts with Copper Triad Cations, [{Nb(C₅H₃RR')₂H₃}₂M]⁺ (R = R' = H; R = H, R' = SiMe₃; R = R' = SiMe₃; M = Cu, Ag, Au)
AU Antinolo, Antonio; Carrillo-Hermosilla, Fernando; Chaudret, Bruno; Fajardo, Mariano; Fernandez-Baeza, Juan; Lanfranchi, Maurizio; Limbach, Hans-Heinrich; Maurer, Markus; Otero, Antonio; Pellinghelli, Maria Angela
CS Departamento de Quimica Inorganica, Universidad de Castilla-La Mancha, Ciudad Real, 13071, Spain
SO Inorg. Chem. (1996), 35(26), 7873-7881
CODEN: INOCAJ; ISSN: 0020-1669
PB American Chemical Society
DT Journal
LA English
AB The reactions of Nb(C₅H₃RR')₂C₁₂ with Red-Al followed by hydrolysis yield

$\text{Nb}(\text{C5H3RR}')\text{2H3}$ ($\text{R} = \text{R}' = \text{H}$, 1; $\text{R} = \text{H}$, $\text{R}' = \text{SiMe3}$, 2; $\text{R} = \text{R}' = \text{SiMe3}$, 3). These compds. react with Lewis acidic coinage cationic species, namely, $[\text{Cu}(\text{MeCN})_4]\text{PF}_6$, AgBF_4 , and $\text{Au}(\text{THT})\text{PF}_6$, prep'd. in situ from $\text{AuCl}(\text{THT})$ and TiPF_6 in a 2 to 1 ratio to yield $[\{\text{Nb}(\text{C5H3RR}')\text{2H3}\}_2\text{M}]^+$ ($\text{M} = \text{Cu}$, $\text{R} = \text{R}' = \text{H}$, 7; $\text{R} = \text{H}$, $\text{R}' = \text{SiMe3}$, 8; $\text{R} = \text{R}' = \text{SiMe3}$, 9; $\text{M} = \text{Ag}$, $\text{R} = \text{H}$, $\text{R}' = \text{SiMe3}$, 10; $\text{R} = \text{R}' = \text{SiMe3}$, 11; $\text{M} = \text{Au}$, $\text{R} = \text{R}' = \text{H}$, 12; $\text{R} = \text{H}$, $\text{R}' = \text{SiMe3}$, 13; $\text{R} = \text{R}' = \text{SiMe3}$, 14). Like 1, but unlike the corresponding Ta derivs.

$\text{Ta}(\text{C5H3RR}')\text{2H3}$ ($\text{R} = \text{R}' = \text{H}$, 4; $\text{R} = \text{H}$, $\text{R}' = \text{SiMe3}$, 5; $\text{R} = \text{R}' = \text{SiMe3}$, 6), 2 and 3 show exchange couplings in their high-field ${}^1\text{H}$ NMR spectra due to a hydride tunneling phenomenon. The magnitudes of exchange couplings are larger in the cases of 2 and 3 than in the case of 1 as a result of the decrease of electron d. upon increasing the no. of SiMe3 substituents on the Cp ring. The addn. of a Lewis acidic cation results in the observation of an AB2 pattern for the hydrides at room temp., which

splits at low temp. into an ABC one in agreement with a fluxional behavior of the cation which binds to two hydrides of each Nb center. The activation energy of these fluxional processes are apprx. 42-45 kJ mol⁻¹ in the case of Cu adducts, 37 kJ mol⁻¹ in the case of Ag adducts, and 40 kJ mol⁻¹ in the case of Au adducts. The magnitude of exchange couplings is reduced upon addn. of Cu cation to 1-3, is of the same order of magnitude after addn. of a Ag cation, and is greatly increased by addn. of a Au cation.

A model is proposed to explain these variations which involves two isomeric states that are close in energy, one involving two bridging and one terminal hydrides on Nb and one involving one bridging hydride and a dihydrogen mol. A line shape anal. expt. carried out on 14 allows detn. of the parameters of the classical exchange, the coupling consts. at various temps. which reach 550 Hz at 347 K, and the parameters of the quantum mech. exchange according to the authors' proposed model. The structure of 14 was studied by x-ray diffraction. The structure was solved from diffractometer data by Patterson method and refined by

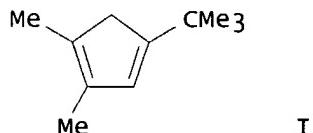
blocked full-matrix least squares from 3082 obsd. reflections to R and R_w values of 0.0346 and 0.0381, resp. The structure shows two bridging hydrides between the Nb and Au atoms; one of them is found close to the terminal hydride.

L24 ANSWER 5 OF 26 CA COPYRIGHT 1999 ACS
AN 125:168231 CA
TI Mixed-dicyclopentadienyl niobium and tantalum complexes: synthesis and reactivity. X-ray molecular structures of $\text{Ta}(\cdot\text{eta.5-C5Me5})(\cdot\text{eta.5-C5H4SiMe3})\text{Cl}_2$ and $\text{Ta}(\cdot\text{eta.5-C5Me5})\{\cdot\text{eta.5-C5H3(SiMe3)}_2\}\text{H3}$
AU Castro, Aurora; Gomez, Manuel; Gomez-Sal, Pilar; Manzanero, Antonio; Royo, Pascual
CS Departamento de Quimica Inorganica, Universidad de Alcala de Henares, Campus Universitario, Alcala de Henares, 28871, Spain
SO J. Organomet. Chem. (1996), 518(1-2), 37-46
CODEN: JORCAI; ISSN: 0022-328X
DT Journal
LA English
AB MCp^*Cl_4 ($\text{Cp}^* = \cdot\text{eta.5-C5Me5}$) reacts with LiCp [$\text{Cp} = \text{C5H4(SiMe3)}$ (Cp'); C5H3(SiMe3)_2 (Cp'')] and sodium amalgam in 1:1:1 molar ratio to give the paramagnetic dicyclopentadienyl niobium and tantalum(IV) complexes $\text{MCp}^*\text{CpCl}_2$ ($\text{M} = \text{Nb}$, $\text{Cp} = \text{Cp}'$ 1; Cp'' 2; $\text{M} = \text{Ta}$, $\text{Cp} = \text{Cp}'$ 3; Cp'' 4). Reactions of 3 and 4 with 1/2 equiv of PCl_5 afford the diamagnetic trichloro complexes $\text{TaCp}^*\text{CpCl}_3$ ($\text{Cp} = \text{Cp}'$ 5; Cp'' 6), while oxidn. with dry O_2 gives the diamagnetic dinuclear complexes $[\text{TaCp}^*\text{CpCl}_2]_2(\cdot\mu\text{-O})$ ($\text{Cp} = \text{Cp}'$ 7; Cp'' 8), and with air are transformed into the corresponding oxo derivs. $\text{TaCp}^*\text{CpCl}(\text{O})$ ($\text{Cp} = \text{Cp}'$ 9; Cp'' 10). Treatment of compds. 3 and 4 with a slight excess of LiAlH_4 affords the trihydrido complexes $\text{TaCp}^*\text{CpH}_3$ ($\text{Cp} = \text{Cp}'$ 11; Cp'' 12). The trihydrido complex 12 reacts with two-electron donor ligands on heating to yield the hydrido tantalum(III) compds. $\text{TaCp}^*\text{Cp}''\text{H(L)}$ ($\text{L} = \text{CO}$, C_2H_4 , RNC). All the new complexes were characterized by usual IR and NMR spectroscopic methods. The crystal structures of 3 and 12 were detd. by x-ray diffraction studies. Crystals

of 3 are orthorhombic, space group P212121, with $Z = 4$ in a unit cell of dimensions $a = 11.775(5)$.ANG., $b = 12.821(1)$.ANG., $c = 13.037(7)$.ANG.. Crystals of 12 are triclinic, space group P.hivin.1 with $Z = 2$ in a unit cell of dimensions $a = 7.384(4)$.ANG., $b = 10.861(2)$.ANG., $c = 16.731(3)$.ANG., $\alpha = 75.94(2)$.degree., $\beta = 84.75(3)$.degree. and γ .

= 72.57(4).degree.. Both structures were solved from diffractometer data by a combination of direct and Fourier methods and refined by full-matrix least squares fit on the basis of 4088 (3) and 4594 (12) obsd. reflections to R and R_w values of 0.040 and 0.064 (3) and 0.022 and 0.033 (12) resp.

L24 ANSWER 6 OF 26 CA COPYRIGHT 1999 ACS
AN 125:33791 CA
TI Stereochemistry in Group 5 organometallic complexes: a metallocphosphine with an asymmetric tantalum center as precursor of chiral bimetallic derivatives
AU Sauvageot, Philippe; Moiese, Claude
CS Lab. synthese d'electrosynthese organometalliques, Faculte sciences Gabriel, Dijon, 21000, Fr.
SO Bull. Soc. Chim. Fr. (1996), 133(2), 177-182
CODEN: BSCFAS; ISSN: 0037-8968
DT Journal
LA English
GI



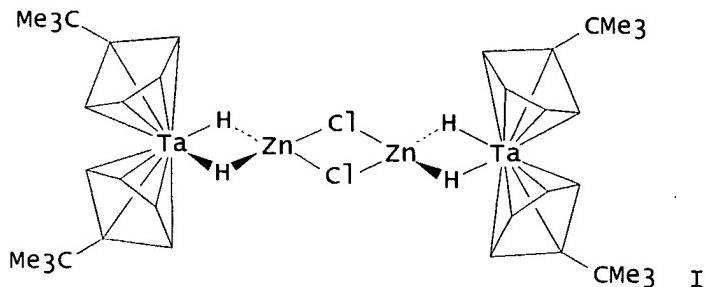
AB A trisubstituted cyclopentadiene deriv. I was synthesized and used as a cyclopentadienyl ligand to obtain the Ta (IV) deriv. Cp'CpTaCl₂. Starting from this dichloride, a multistep transformation (redn., carbonylation and reaction with PMe₂Cl) leads to the chiral metallocphosphine Cp'CpTa(CO)PMe₂, which contains an asym. Ta center. This metalloligand reacts with a carbonyl Cr fragment giving a chiral bimetallic deriv. Cp'CpTa(CO)PMe₂Cr(CO)₅.

L24 ANSWER 7 OF 26 CA COPYRIGHT 1999 ACS
AN 124:232678 CA
TI Convenient synthesis of Cp₂TaH₃ using LiAlH₄
AU Zvukova, T. M.; Sizov, A. I.
CS Department of Chemistry, M. V. Lomonosov State University, Moscow, 119899, Russia
SO Izv. Akad. Nauk, Ser. Khim. (1995), (10), 2050-1
CODEN: IASKEA
DT Journal
LA Russian
OS CASREACT 124:232678
AB The prepn. of Cp₂TaH₃ via the reaction between TaCl₅, CpNa, and LiAlH₄ in dimethoxyethane is described. The yield of Cp₂TaH₃ is 25%.

L24 ANSWER 8 OF 26 CA COPYRIGHT 1999 ACS
AN 113:132367 CA
TI Copper(I) complexes with metal-metal (d₁₀-d₁₀) bond. Crystal and molecular structures of adducts of tantalocene trihydride with copper(I) iodide of composition: (.eta.5-C₅H₅)₂TaH[(.mu.2-H)Cu(.mu.2-I)2Cu(.mu.2-H)2HTa(.eta.5-C₅H₅)₂, (.eta.5-C₅H₄Bu-tert)2TaH(.mu.2-H)2Cu(.mu.2-I)2Cu(.mu.2-H)2HTa(.eta.5-C₅H₄Bu-tert)2.CH₃CN and {Cu(.mu.3-I).P[N(CH₃)₂]₃}₄
AU Arkhireeva, T. M.; Bulychev, B. M.; Sizov, A. I.; Sokolova, T. A.; Bel'skii, V. K.; Soloveichik, G. L.

CS Dep. Chem., M. V. Lomonosov Moscow State Univ., Moscow, 119899, USSR
 SO Inorg. Chim. Acta (1990), 169(1), 109-18
 CODEN: ICHAA3; ISSN: 0020-1693
 DT Journal
 LA English
 OS CASREACT 113:132367
 AB An interaction of copper(I) halides with tantalocene trihydride $Cp'2TaH_3$ led to adducts of 2:1 ($Cp' = \eta.5\text{-C}_5\text{H}_5$) or 1:1 ($Cp' = C_5\text{H}_5\text{CMe}_3$) compn. Structures of complexes $(\eta.5\text{-C}_5\text{H}_5)_2\text{TaH}[(\mu.2\text{-H})\text{Cu}(\mu.2\text{-I})_2\text{Cu}(\mu.2\text{-H})]_2\text{TaH}(\eta.5\text{-C}_5\text{H}_5)$ (I) and $(\eta.5\text{-C}_5\text{H}_4\text{CMe})_2\text{TaH}(\mu.2\text{-H})_2\text{Cu}(\mu.2\text{-I})\text{Cu}(\mu.2\text{-H})_2\text{TaH}(\eta.5\text{-C}_5\text{H}_4\text{CMe})_2$ (II) were established by X-ray anal. In both complexes the $\text{Cu}(\mu.2\text{-I})_2\text{Cu}$ moiety is bonded with tantalum atoms by one (I, $\text{Ta}\dots\text{Cu} = 2.788 \text{ \AA}$) or two (II, $\text{Cu}\dots\text{Cu} = 2.844 \text{ \AA}$) hydrogen bridges. The model of bonding of $\text{LnCu}(\mu.2\text{-I})_2\text{CuLn}$ complexes has been proposed and the conditions of realization of the bond between transition metal atoms with a d10 electron shell are discussed. It is shown that the conditions of $n = 2$ and bulky ligand L are essential but insufficient, e.g. the 1:1 adduct of Cu(I) with bulky phosphine $P(\text{NMe}_2)_3$ is a tetramer $[\text{Cu}(\mu.2\text{-I}).\text{cntdot.}P(\text{NMe}_2)_3]_4$ without Cu-Cu bonds.

L24 ANSWER 9 OF 26 CA COPYRIGHT 1999 ACS
 AN 112:217133 CA
 TI Crystal and molecular structure of
 bis(tert-butylcyclopentadienyl)tantalum
 trihydride complex with zinc chloride $[(\eta.5\text{-C}_5\text{H}_4\text{Bu-tert})_2\text{Ta}(\text{H})(\mu.2\text{-H})_2\text{ZnCl}(\mu.2\text{-Cl})]_2$
 AU Gun'ko, Yu. K.; Bel'skii, V. K.; Sizov, A. I.; Soloveichik, G. L.;
 Bulychev, V. M.
 CS Mosk. Gos. Univ., Moscow, USSR
 SO Metalloorg. Khim. (1989), 2(5), 1121-4
 CODEN: MEKHEX
 DT Journal
 LA Russian
 GI



AB Reaction of $(\text{Me}_3\text{C}_5\text{H}_4)_2\text{TaH}_3$ ($\text{C}_5\text{H}_5 = \eta.5\text{-cyclopentadienyl}$) with ZnCl_2
 in THF-PhMe gave the bridged title compd. (I), the structure of which was
 detd. by x-ray crystallogr.

L24 ANSWER 10 OF 26 CA COPYRIGHT 1999 ACS
 AN 112:119088 CA
 TI Hydride abstraction. The reaction of
 [bis(diphenylphosphino)ethane]carbon
 ylhaloiridium with bis(cyclopentadienyl)trihydridotantalum
 AU Deutsch, Paul P.; Maguire, John A.; Jones, William D.; Eisenberg, Richard
 CS Dep. Chem., Univ. Rochester, Rochester, NY, 14627, USA
 SO Inorg. Chem. (1990), 29(4), 686-90
 CODEN: INOCAJ; ISSN: 0020-1669
 DT Journal
 LA English
 OS CASREACT 112:119088
 AB The reaction of $\text{Ir}_x(\text{CO})(\text{dppe})$ ($X = \text{Br}, \text{I}$, $\text{dppe} = 1,2\text{-bis(diphenylphosphino)ethane}$) with Cp^2TaH_3 ($\text{Cp} = \eta.5\text{-cyclopentadienyl}$) is extremely rapid and forms fac- $\text{IrH}_3(\text{CO})(\text{dppe})$ and Cp^2TaX_2 , or Cp^2TaXL ($\text{L} = \text{CO}, \text{C}_2\text{H}_4, \text{PrC.tpbond.CPr}$) in the presence of added L. Trapping and

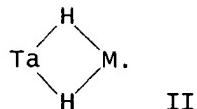
isotope-labeling expts. indicate that the reaction does not proceed through prodn. of free IrH₂X(CO)(dppe), [IrH(CO)(dppe)], or [Cp₂TaH].

The results are consistent with formation of unstable hydride and halide-bridged binuclear intermediates, in which transfer of all hydride and halide ligands occurs before fragmentation into mononuclear species.

L24 ANSWER 11 OF 26 CA COPYRIGHT 1999 ACS
AN 111:194955 CA
TI Comparative study on methods for synthesizing tantalocene trihydride
AU Zvukova, T. M.; Sizov, A. I.; Gun'ko, Yu. K.; Bulychev, B. M.;
Soloveichik, G. L.
CS Inst. Khim. Fiz., Chernogolovka, USSR
SO Metalloorg. Khim. (1988), 1(5), 1179-83
CODEN: MEKHEX
DT Journal
LA Russian
AB Comparison of the known methods for prepn. of Cp₂TaH₃ (I;
.eta.5-cyclopentadienyl) showed that they either had poor reproducibility
or were too labor-intensive. Modifications were developed for the
two-stage (via Cp₂TaCl₂, with addnl. reducing agent NaCp) and direct
[from
TaCl₅, NaCp, and NaAlH₂(OCH₂CH₂OMe)₂] synthesis of I in MeOCH₂CH₂OMe in
20-30% yields.

L24 ANSWER 12 OF 26 CA COPYRIGHT 1999 ACS
AN 111:115407 CA
TI Bonding interactions between three adjacent hydrogen ligands.
Preparation
and spectroscopic properties of the tantalum and niobium complexes
[Ta(H)₃(C₅H₅-nRn)₂] (R = SiMe₃, n = 1 or 2) and [Nb(H₃)(C₅H₅-nRn)₂] [(n =
1, R = Me or SiMe₃; n = 2, R = SiMe₃)
AU Antinolo, Antonio; Chaudret, Bruno; Commenges, Gerard; Fajardo, Mariano;
Jalon, Felix; Morris, Robert H.; Otero, Antonio; Schweltzer, Caroline T.
CS Univ. Alcala Henares, Madrid, Spain
SO J. Chem. Soc., Chem. Commun. (1988), (17), 1210-12
CODEN: JCCCAT; ISSN: 0022-4936
DT Journal
LA English
OS CASREACT 111:115407
AB The title complexes were prepd. in 60-70% yield by treating
MC₂(C₅H₅-nRn)₂ (C₅H₅ = .eta.5-cyclopentadienyl; same R, n; M = Nb, Ta)
with NaAlH₂(OCH₂CH₂OMe)₂ in PhMe. The Ta complexes are true hydrides,
whereas the Nb complexes have bonding interactions among the three
hydrogen atoms, as shown by short NMR T₁ values and unusual couplings
¹H(H,H) which vary with temp. from less than 3 to about 100 Hz.

L24 ANSWER 13 OF 26 CA COPYRIGHT 1999 ACS
AN 110:173367 CA
TI Reactions of tantalocene trihydride (.eta.5-C₅H₅)₂TaH₃ with second group
metal halides. Crystal and molecular structure of
(.eta.5-C₅H₅)₂TaH(.mu.2-
H)ZnCl₂.cntdot.C4H₈O
AU Arkhireeva, T. M.; Bulychev, B. M.; Sokolova, T. A.; Soloveichik, G. L.;
Belsky, V. K.; Boiko, G. N.
CS Chem. Dep., M. V. Lomonosov Moscow State Univ., Moscow, 119899, USSR
SO Inorg. Chim. Acta (1988), 141(2), 221-6
CODEN: ICCHA3; ISSN: 0020-1693
DT Journal
LA English
OS CASREACT 110:173367
GI

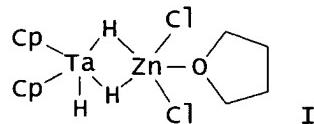


AB Interaction of Cp₂TaH₃ (Cp = η .₅-C₅H₅) with the Group II metal halides led to heterometallic complexes Cp₂TaH₃.cntdot.ZnCl₂.cntdot.Et₂O, Cp₂TaH₃.cntdot.ZnCl₂.cntdot.THF (I), Cp₂TaH₃.cntdot.ZnI₂.cntdot.Et₂O, Cp₂TaH₃.cntdot.ZnI₂.cntdot.THF, Cp₂TaH₃.cntdot.CdI₂, and Cp₂TaH₃.cntdot.MgI₂. According to IR and NMR data, the binding in soln. is accomplished via an ordinary hydrogen bridge Ta-H-M (M = Group II metal), whereas in the crystal state this is effected via a double hydrogen bridge, as in II. The interaction of Cp₂TaH₃ with BeCl₂ and MgCl₂ in THF proceeds as a redox reaction to give Cp₂TaCl₂ as one of the reaction products. Complex I has been studied by x-ray anal. The zinc atom in I possesses an unusual coordination no. equal to 5. The coordination polyhedron of the zinc atom is an essentially distorted trigonal bipyramidal.

L24 ANSWER 14 OF 26 CA COPYRIGHT 1999 ACS
AN 109:6661 CA
TI Alpha- and beta-migratory insertion and elimination processes for alkyl complexes of permethylscandocene and permethyltantalocene
AU Parkin, G.; Bunel, E.; Burger, B. J.; Trimmer, M. S.; Van Asselt, A.; Bercaw, J. E.
CS Div. Chem. Eng., California Inst. Technol., Pasadena, CA, 91125,
USA
SO J. Mol. Catal. (1987), 41(1-2), 21-39
CODEN: JMCADS; ISSN: 0304-5102
DT Journal
LA English
AB Beta-migratory insertion and elimination processes for alkyl derivs. of permethylscandocene, (η .₅-C₅Me₅)₂ScR, have been investigated.

Ethylene is rapidly polymd. at -80.degree. by (η .₅-C₅Me₅)₂ScR (R = H, Me, Et, Pr, etc.) without the need for a co-catalyst. The relative rates of ethylene insertion into scandium-alkyl bonds and the propensity for β -H elimination to afford olefin and (η .₅-C₅Me₅)₂ScH depend critically on the nature of R. With less sterically encumbered scandocene compds., e.g. [(η .₅-C₅Me₄)SiMe₂(η .₅-C₅Me₄)]ScH, α -olefins are oligomerized selectively to the head-to-tail dimers, and catalytic cyclization of 1,5-hexadiene or 1,6-heptadiene to methylenecyclopentane or methylenecyclohexane is obsd. Both α - and β -migratory insertion and elimination processes, which interconvert alkyl with alkylidene hydride or olefin hydride derivs. of permethyltantalocene i.e., [(η .₅-C₅Me₅)₂TaXR]. dblharw. (η .₅-C₅Me₅)₂Ta(:X)R (X = alkylidene, olefin; R = H, alkyl)], have been examd. For a complex with the alkyl substituent appended from a cyclopentadienyl ligand, [(η .₅-C₅Me₅). η .₅-C₅Me₄CH₂CH₂CH₂)Ta], the relative rates of α -H and β -H elimination have been measured, and, significantly, α -H elimination is found to be 108 times faster than β -H elimination at 100.degree.. The relative rates of the hydrogen and Me migrations to alkylidene, benzyne and olefin ligands have been detd. Related α - and β - elimination processes have been examd. for some alkoxide, thiolate and amide derivs., [(η .₅-C₅Me₅)₂TaYMe] (Y = O, S, NMe).

L24 ANSWER 15 OF 26 CA COPYRIGHT 1999 ACS
AN 107:217768 CA
TI Crystal and molecular structure of bimetallic complex of (η .₅-C₅H₅)₂TaH(.mu.2-H)ZnCl₂C₄H₈O
AU Arkhireeva, T. M.; Bel'skii, V. K.; Bulychev, B. M.; Soloveichik, G. L.
CS Otd. Inst. Khim. Fiz., Chernogolovka, USSR
SO Izv. Akad. Nauk SSSR, Ser. Khim. (1986), (12), 2819-21
CODEN: IASKA6; ISSN: 0002-3353
DT Journal
LA Russian
OS CASREACT 107:217768
GI



AB The title complex (I, Cp = .eta.5-cyclopentadienyl) was prep'd. by treating Cp₂TaH₃ with ZnCl₂ in THF and its crystal and mol. structure detd.

L24 ANSWER 16 OF 26 CA COPYRIGHT 1999 ACS
 AN 104:186564 CA
 TI Bent-sandwich derivatives of tantalum bearing one or two pentamethylcyclopentadienyl ligands
 AU Gibson, Vernon C.; Bercaw, John E.; Bruton, William J., Jr.; Sanner, Robert D.
 CS Arthur Amos Noyes Lab. Chem. Phys., California Inst. Technol., Pasadena, CA, 91125, USA
 SO Organometallics (1986), 5(5), 976-9
 CODEN: ORGND7; ISSN: 0276-7333
 DT Journal
 LA English
 OS CASREACT 104:186564
 AB The compds. (.eta.5-C₅Me₅)₂TaCl₂ and (.eta.5-C₅Me₅).(.eta.5-C₅H₅)TaCl₂ are prep'd. in good yield by treatment of the trimethylphosphine adduct, (.eta.5-C₅Me₅)TaCl₃(PMe₃), with potassium pentamethylcyclopentadienide or sodium cyclopentadienide in refluxing toluene. Reaction of (.eta.5-C₅Me₅)₂TaCl₂ with Grignard reagents, RMgX (R = Et, Pr), affords the olefin complexes (.eta.5-C₅Me₅)₂TaH(C₂H₃R') (R' = H, Me). Treatment of (.eta.5-C₅Me₅)₂TaCl₂ or (.eta.5-C₅Me₅).(.eta.5-C₅H₅)TaCl₂ with LiAlH₄ in di-Et ether, followed by aq. workup, gives (.eta.5-C₅Me₅)₂TaH₃ and (.eta.5-C₅Me₅).(.eta.5-C₅H₅)TaH₃, resp., which react with two-electron donor ligands (L = CO, olefin) at elevated temp. to give (.eta.5-C₅Me₅)₂TaH(L) and (.eta.5-C₅Me₅).(.eta.5-C₅H₅)TaH(L).

L24 ANSWER 17 OF 26 CA COPYRIGHT 1999 ACS
 AN 103:178368 CA
 TI Photochemistry of M(.eta.5-C₅H₅)₂(H)CO and M(.eta.5-C₅H₅)₂H₃ (M = Nb, Ta) in low-temperature matrixes
 AU Baynham, Robin F. G.; Chetwynd-Talbot, Jennifer; Grebenik, Peter; Perutz, Robin N.; Powell, Mark H. A.
 CS Inorg. Chem. Lab., Oxford, UK
 SO J. Organomet. Chem. (1985), 284(2), 229-42
 CODEN: JORCAI; ISSN: 0022-328X
 DT Journal
 LA English
 OS CASREACT 103:178368
 AB Photolysis of MCp₂H₃ (M = Nb, Ta; Cp = .eta.5-cyclopentadienyl) in argon and nitrogen matrixes yields the 16-electron complexes MCp₂H, previously (Klabunde, U.; Parshall, G., 1972) postulated as intermediates in the catalytic activation of aryl C-H bonds. The same complexes are generated by photolysis of MCp₂(H)CO, together with small amts. of the 17-electron MCp₂CO. In CO matrixes MCp₂H₃ is converted to MCp₂(H)CO while further reaction of MCp₂(H)CO yields MCp₂CO and dicarbonyl products. The reactions were followed by IR and UV/VIS spectroscopy. The UV data on TaCp₂H₃ conflict with previously published (Foust, D., et al, 1982) soln. spectra.

L24 ANSWER 18 OF 26 CA COPYRIGHT 1999 ACS
 AN 102:204067 CA
 TI Carbon-hydrogen activation. Synthesis of silyl derivatives of niobocene and tantalocene hydrides, their H/D exchange reactions with benzene-d₆
 and the structure of Cp₂Ta(H)₂SiMe₂Ph
 AU Curtis, M. David; Bell, Larry G.; Butler, William M.
 CS Dep. Chem., Univ. Michigan, Ann Arbor, MI, 48109, USA
 SO Organometallics (1985), 4(4), 701-7
 CODEN: ORGND7; ISSN: 0276-7333

DT Journal
 LA English
 OS CASREACT 102:204067
 GI For diagram(s), see printed CA Issue.
 AB Cp₂MH₃ (M = Nb, Ta; Cp = cyclopentadienyl) reacted with PhMe₂SiH to give Cp₂M(H)₂SiPhMe₂ (I). Cp₂NbH₃ (II) reacted stoichiometrically with HSiMe₂OsiMe₃ (III) to give partial conversion to Cp₂Nb(H)₂SiMe₂OsiMe₃, and catalyzed conversion of III to HSiMe₂(OsiMe₂)_nSiMe₃ (n = 1-3) and (Me₃SiO)₂SiMe₂. II catalyzed H-D exchange between Et₃SiH and C₆D₆ and produced deuterated [Cp(.mu.-.eta.1,.eta.5-C₅H₄)HNb]₂ as the major organometallic product. The x-ray crystal structure of I (M = Ta) (IV) showed the Ta-Si bond length was 2.651(4) .ANG.. This is the first detn. of a Ta-Si bond length. Details of the ¹H NMR and the ⁹³Nb NMR of II were also reported.

L24 ANSWER 19 OF 26 CA COPYRIGHT 1999 ACS

AN 100:102730 CA

TI Olefin isomerization

IN Johnson, Thomas H.

PA Shell Oil Co., USA

SO U.S., 5 pp.

CODEN: USXXAM

DT Patent

LA English

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	-----	-----	-----	-----
PI US 4423276	A	19831227	US 82-444755	19821126

AB .alpha.-Olefins (I) are prep'd. by isomerization of non-terminal olefins in

an inert solvent using Ta complexes with cyclopentadiene (optionally alkyl-substituted. I form complexes with the catalyst which are decompd.,

with regeneration of the catalyst, by treatment with O₂, CO, etc. I are then sepd. by distn. Thus, cis- and trans-EtCH:CHMe (45:55) in THF were treated with 10 mg trihydrosi(.eta.5-cyclopentadienyl)tantalum and heated

48 h at 100.degree. to give 11% conversion to EtCH:CH₂. The catalyst also isomerizes trans- to cis-olefins.

L24 ANSWER 20 OF 26 CA COPYRIGHT 1999 ACS

AN 98:179536 CA

TI Substituted bis(cyclopentadienyl)tantalum complexes; synthesis and reactivity of dichlorides, tri- and monohydrides

AU Leblanc, Jean Claude; Reynoud, Jean Francois; Moise, Claude

CS Lab. Synth. Electrosynth., Fac. Sci., Dijon, 21100, Fr.

SO C. R. Seances Acad. Sci., Ser. 2 (1982), 295(8), 755-7

CODEN: CRSUDO

DT Journal

LA French

GI For diagram(s), see printed CA Issue.

AB Treating Ta dichlorides I (R = CMe₃, SiMe₃, CMe₂Ph, CHMePh) with Na[AlH₂(OCH₂CH₂OMe)₂] gave the trihydrides II (same R). Carbonylation of II gave the monohydrides III (R = CMe₃, SiMe₃). Meso and racemic isomers of I and II (R = CHMePh) are obsd.

L24 ANSWER 21 OF 26 CA COPYRIGHT 1999 ACS

AN 94:84242 CA

TI Mono- and bis-.eta.-cyclopentadienyl derivatives of niobium and tantalum: improved synthetic routes via trialkyl(cyclopentadienyl)tin reagents

AU Bunker, Mark J.; De Cian, Andre; Green, Malcolm L. H.; Moreau, Joel J.

E.; Siganporia, Nauzer

CS Inorg. Chem. Dep., Univ. Oxford, Oxford, OX1 3QR, Engl.

SO J. Chem. Soc., Dalton Trans. (1980), (11), 2155-61

CODEN: JCDTBI; ISSN: 0300-9246

DT Journal

LA English

AB Reaction of MX₅ (M = Ta, Nb; X = Cl, Br) with SnBu₃(.sigma.-C₅H₄R) (C₅H₅)
= cyclopentadienyl; R = H, Me) gave MC₁₄(C₅H₄R), TaX₂(.eta.-C₅H₅)₂, and
NbC₁₂(.eta.-C₅H₄Me)₂ in high yields. NbC₁₄(.eta.-C₅H₄Me) with MeCN,
PhCN, P(OMe)₃, and (Ph₂PCH₂)₂ (L) gave NbC₁₄(.eta.-C₅H₄Me)L. Ta(.eta.-C₅H₅)₂H₃
and Ta(.eta.-C₅H₅)₂(L₁)₂ [(L₁)₂ = (SMe)₂, PhCH₂Cl] were prepd. from
TaCl₂(.eta.-C₅H₅)₂. Partial hydrolysis of NbC₁₄(.eta.-C₅H₄Me) gave
[NbC₁₃(.eta.-C₅H₄Me)(OH₂)]₂O. Redn. of NbC₁₄(.eta.-C₅H₄Me) with [AlEt₂Cl]₂
in the presence of (Ph₂PCH₂)₂ (L₂) gave NbC₁₃(.eta.-C₅H₅)L₂.PhMe, which
reduced with Na amalgam in the presence of CO to give Nb(.eta.-
C₅H₅)₂(CO)₂, which, in turn, protonated in acid giving
[Nb(.eta.-C₅H₅)₂(CO)₂H]₂[PF₆]. NbBr₃(.eta.-C₅H₅)₂.PhMe was prepd. from
Nb(.eta.-C₅H₅)₂(CO)₂ and PhCH₂Br, and [Pt[Ta(.eta.-C₅H₅)₂(SMe)₂]₂][PF₆]₂
was prepd. from PtCl₂(NCPh)₂ and Ta(.eta.-C₅H₅)₂(SMe)₂.

L24 ANSWER 22 OF 26 CA COPYRIGHT 1999 ACS
AN 90:55053 CA
TI New synthetic pathways in dicyclopentadienyltantalum chemistry
AU Green, Malcolm L. H.; Moreau, Joel J. E.
CS Inorg. Chem. Lab., Oxford, Engl.
SO J. Organomet. Chem. (1978), 161(2), C25-C26
CODEN: JORCAI; ISSN: 0022-328X
DT Journal
LA English
AB (.eta.-C₅H₅)₂TaX₂ (.eta.-C₅H₅ = cyclopentadienyl; X = Cl, Br) are prepd.
in 80% yield by treating Tax₅ with (C₅H₅)₂SnBu₃. (.eta.-C₅H₅)₂TaH₃ (I) is
formed in 42% yield from (.eta.-C₅H₅)₂TaCl₂ and NaAlH₂(OCH₂CH₂OMe)₂. I
with BuLi gives a Ta-Li deriv. which reacts with PhCH₂Cl, giving
.eta.-C₅H₅)₂Ta(CH₂Ph)Cl.

L24 ANSWER 23 OF 26 CA COPYRIGHT 1999 ACS
AN 90:23204 CA
TI Synthesis and properties of dicyclopentadienyltantalum hydride olefin
compounds
AU Klazinga, A. H.; Teuben, J. H.
CS Lab. Anorg. Chem., Rijksuniv. Groningen, Groningen, Neth.
SO J. Organomet. Chem. (1978), 157(4), 413-19
CODEN: JORCAI; ISSN: 0022-328X
DT Journal
LA English
AB Reactions of Cp₂TaCl₂ (Cp = cyclopentadienyl) with RMgCl (R = Pr, Me₂CH,
Bu, Me₂CHCH₂, n-C₅H₁₁ and cyclopentyl) give tantalum hydride .pi.-olefin
complexes Cp₂Ta(H)L (L = CH₂:CHR₁, R₁ = Me, Et, Pr; cyclopentene). Two
isomers of Cp₂Ta(H)(CH₂:CHMe) were obtained. The complexes are useful
starting materials for the synthesis of other tantalum hydride species,
e.g. Cp₂Ta(H)PEt₃ and Cp₂TaH₃.

L24 ANSWER 24 OF 26 CA COPYRIGHT 1999 ACS
AN 86:132657 CA
TI Neutron diffraction studies of transition metal hydride complexes
AU Koetzle, T. F.; Bau, R.
CS Brookhaven Natl. Lab., Upton, N. Y., USA
SO Report (1976), BNL-21470, 10 pp. Avail.: NTIS
From: ERDA Energy Res. Abstr. 1976, 1(12), Abstr. No. 26207
DT Report
LA English
AB Investigations of H₃Ta(C₅H₅)₂ (I) (C₅H₅ = cyclopentadienyl), H₂W₂(CO)₉(NO)
(II), and H₂W₂(CO)₈(NO)(P(OMe)₃) (III) have been completed. Preliminary
results are available for HFeCo₃(CO)₉[P(OMe)₃]₃ (IV). This work,
together
with studies of HMo₂(C₅H₅)₂(CO)₄(PMe₂) (V) and [Et₄N][Cr₂(CO)₁₀H] (VI)
led
to some general observations on the geometry and the nature of bonding in
these compds. For example, in the structures of II and III, both of
which
have bent W-H-W linkages (< W-H-W in the range 125-130.degree.), there is
conclusive evidence for the existence of a closed 3-center W-H-W bond
with
significant metal-metal interaction. Such is the case, because
extensions

of the axial W-C and W-N bonds trans to the hydride intersect at a point near the center of the W-H-W triangle. The geometry of V, which also contains a bent M-H-M bond, is consistent with that of II and III. Bridging M-H bonds in these 2nd- and 3rd-row hydrides range in length from 1.85 to 1.89 .ANG., compared to 1.75 .ANG. in the 1st-row polynuclear complex IV. For metals of corresponding rows, bridging M-H bonds are about 0.1 .ANG. longer than terminal bonds, which are classified as single covalent bonds.

L24 ANSWER 25 OF 26 CA COPYRIGHT 1999 ACS
AN 79:92349 CA
TI Lewis acidic metal alkyl-transition metal complex interactions. I.
Niobium and tantalum hydrides
AU Tebbe, Fred N.
CS Exp. Stn., E. I. du Pont de Nemours and Co., Wilmington, Del., USA
SO J. Amer. Chem. Soc. (1973), 95(16), 5412-14
CODEN: JACSAT
DT Journal
LA English
AB Lewis acidic metal alkyls react with dicyclopentadienylniobium and -tantalum hydrides to produce Lewis acid-Lewis base adducts or the products of alkane elimination from these adducts. Stable adducts isolated are (C_5H_5 = cyclopentadienyl, C_5H_4 = .mu.-cyclopentadienyl): [$(C_5H_5)(C_5H_4)NbHA_1Et_3]_2$, $(C_5H_5)_2Nb(C_2H_4)HA_1Et_3$, $(C_5H_5)_2Nb(CO)HA_1Et_3$, $(C_5H_5)_2NbPM_3HA_1Et_3$, and $(C_5H_5)_2TaH_3A_1Et_3$. Stable products of alkane evolution isolated are $(C_5H_5)_2NbH_2A_1Et_2$ and $[(C_5H_5)_2NbH_2]_2Zn$. Et₃Al inhibits insertion of ethylene into the metal hydride bond in $(C_5H_5)_2Nb(C_2H_4)HA_1Et_3$.

L24 ANSWER 26 OF 26 CA COPYRIGHT 1999 ACS
AN 66:28900 CA
TI Dicyclopentadienyltantalum (and niobium) trihydrides
IN Wilkinson, Geoffrey
PA Ethyl Corp.
SO U.S., 5 pp.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3288829		19661129		
PRAI	GB		19610119		

AB The title compds. are useful as plating agents, fuel and oil additives, polymerization catalysts, and pesticides. E. g., 22 g. Na cyclopentadienide was dissolved in 420 g. tetrahydrofuran (THF), 15 g. NaBH₄ was added, the resulting soln. cooled to -50.degree., 45 g. TaC₁₅ was added, the mixt. was refluxed under N 12 hrs., the THF was distd. off, and the solid residue sublimed under N in vacuo at 110-20.degree. to yield 70-80% dicyclopentadienyltantalum trihydride, cryst. solid stable in air for only a short time and sol. in benzene. Similarly prep'd. was dicyclopentadienylniobium trihydride.

=> d 123 bib abs

L23 ANSWER 1 OF 1 CA COPYRIGHT 1999 ACS
AN 118:259466 CA
TI Low-temperature chemical vapor deposition or laser photodeposition of metals on substrates by using organometallic compounds
IN Hicks, Robert F.; Kaesz, Herbert D.; Xu, Dagiang
PA University of California, Berkeley, USA
SO U.S., 8 pp. Cont.-in-part of U.S. Ser. No. 260,799, abandoned.
CODEN: USXXAM
DT Patent
LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5130172	A	19920714	US 89-428245	19891026 <--
PRAI	US 88-260799		19881021		
AB	Metals are deposited on Si or W substrates at .apprx.20-.ltoreq.190.degree. by using organometallic compd. LnMRm in presence of H.				
	L in the compd. is H, ethylene, allyl, methylallyl, butadienyl, pentadienyl, cyclopentadienyl, methylcyclopentadienyl, cyclohexadienyl, hexadienyl, cycloheptatrienyl, or a deriv. of these compds. having .gtoreq.1 C5 alkyl side chain; M is a metal that can readily cycle between 2 oxidn. states and can catalyze hydrogenation of hydrocarbon ligands of the compd.; R is Me, Et, Pr, or Bu; and n and m are each a no. from 0 to the valence of the metal. The compd. is vaporized at .apprx.20-100.degree.. M is selected from the group of metals having at. no. 22-29, 40-47, and 72-79 or 25-29, 42-47, and 74-79 or Co, Rh, Ir, Ni, Pd, Pt, Cu, Ag, Au, and W.				

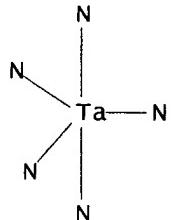
09/012,679

(FILE 'HOME' ENTERED AT 11:29:02 ON 15 APR 1999)

FILE 'REGISTRY' ENTERED AT 11:29:11 ON 15 APR 1999
L1 STRUCTURE uploaded
L2 QUE L1

=> d l1

L1 HAS NO ANSWERS
L1 STR



Structure attributes must be viewed using STN Express query preparation.

=> s l2

SAMPLE SEARCH INITIATED 11:29:38 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED - 32 TO ITERATE
100.0% PROCESSED 32 ITERATIONS 0 ANSWERS
SEARCH TIME: 00.00.02

FULL FILE PROJECTIONS: ONLINE **COMPLETE**
BATCH **COMPLETE**
PROJECTED ITERATIONS: 301 TO 979
PROJECTED ANSWERS: 0 TO 0

L3 0 SEA SSS SAM L1

=> s l2 full

FULL SEARCH INITIATED 11:29:45 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED - 577 TO ITERATE
100.0% PROCESSED 577 ITERATIONS 3 ANSWERS
SEARCH TIME: 00.00.01

L4 3 SEA SSS FUL L1

=> fil ca

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	120.30	120.45

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FILE COVERS 1967 - 10 Apr 1999 (19990410/ED) VOL 130 ISS 16

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=> s 14

L5 2 L4

=> d 1-2 bib abs

L5 ANSWER 1 OF 2 CA COPYRIGHT 1999 ACS
AN 93:8233 CA
TI A convenient preparation of metal pseudohalide compounds
AU Andersen, Richard A.
CS Chem. Dep., Univ. California, Berkeley, CA, 94720, USA
SO Inorg. Nucl. Chem. Lett. (1980), 16(1), 31-2
CODEN: INUCAF; ISSN: 0020-1650
DT Journal
LA English
AB A reaction of $[(Me_3Si)_2N]_3HfCl$ with Me_3SiX gave $[(Me_3Si)_2N]_3Hfx$ ($X = Br, I, N_3, CN$), quant. $[(Me_3Si)_2N]_2Ta(N_3)_3$ was similarly prepd.

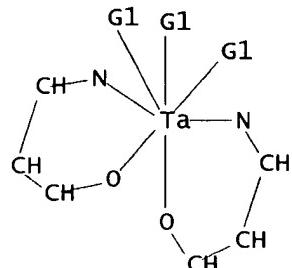
L5 ANSWER 2 OF 2 CA COPYRIGHT 1999 ACS
AN 70:25323 CA
TI Reactions between acetonitrile and dialkylamido-compounds of titanium, zirconium, and tantalum
AU Bradley, Donald C.; Ganorkar, M. C.
CS Queen Mary Coll., London, Engl.
SO Chem. Ind. (London) (1968), (44), 1521-2
CODEN: CHINAG
DT Journal
LA English
AB $M(NMe_2)_x$, where $M = Ta, Zr$, and Ti , were treated with y moles of MeCN to give $M[N:C(Me)NMe_2]_y(NMe_2)_{x-y}$. The ir spectra of these compds. showed a strong band in the 1577-87 cm.⁻¹ region which was attributed to the NCN group of the dimethylaminoacetaldimino ligand, formed by insertion of MeCN in the $M-NMe_2$ bond. The compds. prepd. and their characteristic ir bands were $Ti[N:C(Me)NMe_2](NMe_2)_3$ (I) 1580, $Ti[N:C(Me)NMe_2]_2(NMe_2)_2$ (II) 1577, $Zr[N:C(Me)-NMe_2]_4$ (III) 1587, $Ta[N:C(Me)NMe_2](NMe_2)_4$ (IV) 1585 cm.⁻¹ Hydrolysis of these compds. gave Me_2NH and MeCN. Treatment of $Ti(NEt_2)_4$ or $Zr(NEt_2)_4$ with MeCN probably gave Et_2NH and $Ti(N:C:CH_2)_2$ or $Zr(N:C:CH_2)_2$ although their ir spectra had the characteristic bands at 1560 and 1587 cm.⁻¹, resp., assocd. with compds. I-IV.

09/012,679

L6 (FILE 'REGISTRY' ENTERED AT 11:41:12 ON 15 APR 1999)
L7 STRUCTURE uploaded
QUE L6

=> d 17

L7 HAS NO ANSWERS
L6 STR



G1 H,Me,Et,n-Pr,i-Pr,n-Bu,i-Bu,s-Bu,t-Bu,Ph,CF3

Structure attributes must be viewed using STN Express query preparation.
L7 QUE L6

=> s 17

SAMPLE SEARCH INITIATED 11:46:12 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED - 5 TO ITERATE
100.0% PROCESSED 5 ITERATIONS 0 ANSWERS
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**
BATCH **COMPLETE**
PROJECTED ITERATIONS: 5 TO 234
PROJECTED ANSWERS: 0 TO 0

L8 0 SEA SSS SAM L6

=> s 17 full

FULL SEARCH INITIATED 11:46:45 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED - 80 TO ITERATE
100.0% PROCESSED 80 ITERATIONS 0 ANSWERS
SEARCH TIME: 00.00.01

L9 0 SEA SSS FUL L6

09/012,679

(FILE 'HOME' ENTERED AT 16:04:37 ON 15 APR 1999)

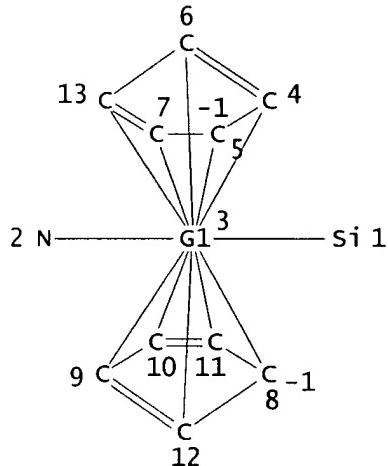
FILE 'REGISTRY' ENTERED AT 16:06:09 ON 15 APR 1999

E TITANOCENE/CN

L1 1 S E10
L2 STR 1271-19-8
L3 STR L2

=> d 13

L3 HAS NO ANSWERS
L3 STR



VAR G1=TI/TA

NODE ATTRIBUTES:

CHARGE IS E-1 AT 5

CHARGE IS E-1 AT 8

DEFAULT MLEVEL IS ATOM

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED

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- 13

SAMPLE SEARCH INITIATED 16:08:13 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED - 55 TO ITERATE
100.0% PROCESSED 55 ITERATIONS
SEARCH TIME: 00.00.01

ANSWERS

FULL ETIE PROJECTIONS: ONLY THE **COMPLETE**

SINEINE COMPLETE
BATCH **COMPLETE**

PROJECTED ITERATIONS: 656 TO 1544

PROJECTED ANSWERS: 0 TO 0

L4 0 SEA SSS SAM L3

=> s 13 full

FULL SEARCH INITIATED 16:08:19 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED - 1027 TO ITERATE
100.0% PROCESSED 1027 ITERATIONS
SEARCH TIME: 00.00.01

0 ANSWERS

L5 0 SEA SSS FUL L3